Functional Gastrointestinal Disorders (FGID): Lessons Learned

Joseph F. Fitzgerald, MD, MACG, MASGE, AGAF

Professor of Pediatrics
Indiana University School of Medicine
James Whitcomb Riley Hospital for Children
Indianapolis, Indiana

In the past 12 months, I have had no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed in this CME activity.

Functional Bowel Disorders
Pediatric Rome Criteria

- Infant regurgitation
- Infant rumination syndrome
- Cyclic vomiting syndrome
- Abdominal migraine
- Functional abdominal pain
- Functional dyspepsia
- Irritable bowel
- Aerophagia
- Functional diarrhea
- Infant dyschezia
- Functional constipation
- Functional fecal retention
- Nonretentive fecal soiling

Functional Bowel Disorders
Pediatric Rome Criteria

- Infant regurgitation
- Infant rumination syndrome
- Cyclic vomiting syndrome
- Abdominal migraine
- Functional abdominal pain
- Functional dyspepsia
- Irritable bowel
- Aerophagia
- Functional diarrhea
- Infant dyschezia
- Functional constipation
- Functional fecal retention
- Nonretentive fecal soiling

Infant Rumination

- Infant rumination seen infrequently today
- 1930s-40s: Seen frequently in institutionalized infants – sometimes fatal

Infant Regurgitation

- Infant regurgitation; (GER) not (GERD)
- 90% of otherwise "normal" infants respond to traditional management:
  - Elevation of head of bed (30º)
  - Thickening feeds
  - Avoid overfeeding
  - Keep elevated for 30 – 45 minutes after meals

SPIT HAPPENS!

- Problem for the laundry – Not PGI

Functional Bowel Disorders
Pediatric Rome Criteria

- Infant regurgitation
- Infant rumination syndrome
- Cyclic vomiting syndrome
- Abdominal migraine
- Functional abdominal pain
- Functional dyspepsia
- Irritable bowel
- Aerophagia
- Functional diarrhea
- Infant dyschezia
- Functional constipation
- Functional fecal retention
- Nonretentive fecal soiling

Cyclic Vomiting Syndrome

- History all that is needed initially
- If frequency >1 episode/month → propranolol
- < 1 episode/month → early ondansetron-ODT

Abdominal Migraine

- Episodic abdominal pain associated with:
  - Nausea
  - Vomiting
  - Headache
  - Photo-/phonophobia
  - Family history of migraine headaches

CVS/Abdominal Migraine

- Avoid triggers
- Propranolol
- Amitriptyline

Functional Bowel Disorders
Pediatric Rome Criteria

- Infant regurgitation
- Infant rumination syndrome
- Cyclic vomiting syndrome
- Abdominal migraine
- Functional abdominal pain
- Functional dyspepsia
- Irritable bowel
- Aerophagia
- Functional diarrhea
- Infant dyschezia
- Functional constipation
- Functional fecal retention
- Nonretentive fecal soiling

Davidsonian Management Principles (90% Effective)

- Purgation
- Prevent impaction (mineral oil → PEG 3350
- Establish a *regular* bowel pattern

Functional Bowel Disorders Pediatric Rome Criteria

- Infant regurgitation
- Infant rumination syndrome
- Cyclic vomiting syndrome
- Abdominal migraine
- Functional dyspepsia
- Irritable bowel
- Functional abdominal pain
- Aerophagia
- Functional diarrhea
- Infant dyschezia
- Functional constipation
- Functional fecal retention
- Nonretentive fecal soiling

Recurrent Abdominal Pain: John Apley 1958 (1909 – 1980)

- ≥ 3 episodes of abdominal pain severe enough to interfere with activity
- ≥ 3 months
- 10% of school-aged children
- ~ 10% organic cause

"Little belly-achers grow up to be big belly-achers and big belly-achers beget little belly-achers".

John Apley

RAP is a Description

- IBS, CFAP, functional dyspepsia and abdominal migraine are diagnoses

What is IBS?

- A group of symptoms:
  - Abdominal pain
  - Constipation and/or diarrhea
  - Bloating/distention
- A "functional" bowel disorder (a problem with the function of the bowels, not their physical structure)

What IBS is Not

- A problem that is "all in your head"
- A serious or life-threatening illness
- A warning that more serious illness is on the way

How is IBS Diagnosed?

- Symptoms must be continuous or recurrent for at least 2 months*
- Abdominal pain or discomfort that is associated with 2 or more of the ff at least 25% of the time:
  - Relieved by defecation
  - Associated with a change in stool frequency
  - Associated with a change in stool consistency (lumpy/hard or loose/watery)
  - A change in stool passage (straining, urgency, feeling of incomplete evacuation)
  - Bloating or feeling of abdominal distention
- There should be no evidence to suggest organic disease

* Rome III. Gastroenterology April 2006.

What is Chronic Functional Abdominal Pain (CFAP)?

- Frequent or continuous pain in the abdomen
- A "functional" gastrointestinal disorder

- CFAP is NOT:
  - A problem with the physical structures in the abdomen
  - Related to events like eating, defecation or menstruation
  - The same thing as irritable bowel syndrome (IBS)

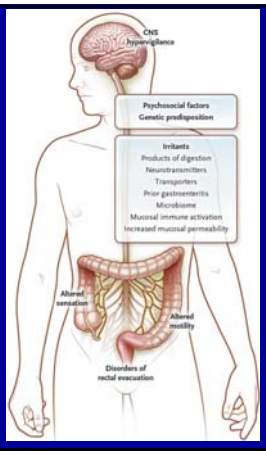
How is CFAP Diagnosed?

- The patient must have:
  - Frequently recurrent or continuous abdominal pain for at least 2 months
  - Incomplete or no relationship of pain with physiologic events (e.g., eating, defecation or menses)
  - Some loss of daily functioning and
  - No evidence of organic disease to explain the pain and insufficient criteria for other functional gastro-intestinal disorders that would explain the abdominal pain

Functional Dyspepsia

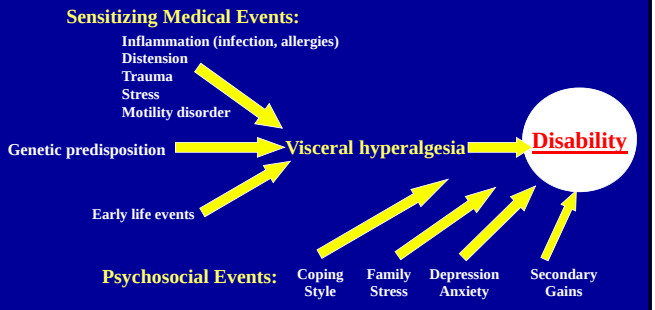
- 2 Months of:
  - Persistent or recurrent pain/discomfort (including bloating, nausea but not vomiting) centered in upper abdomen (above the umbilicus)
    - No organic disease to explain symptoms
- Not IBS:
  - Not relieved by defecation
  - No changes in stool frequency or form

Rome III. Gastroenterology April 2006.

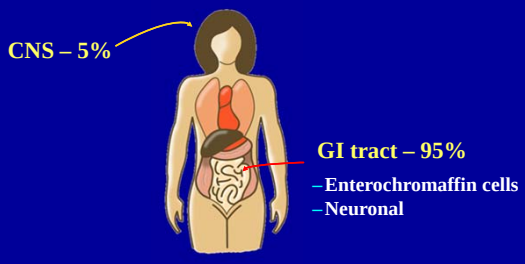


From: Camilleri M: NEJM 2012;367.

Functional Bowel Disorders



The Role of Serotonin



What is the Role of Serotonin in IBS?

- Plasma 5HT elevated in patients with IBS
- Increased number of 5HT containing enteroendocrine cells in rectal biopsies of post-infectious IBS
- Changes in serotonin reuptake transporter (SERT) mRNA in IBS
- Modulation of serotonergic mechanisms impacts symptoms of IBS

FGID Management

"Building on the physician-patient relationship, treatment is biopsychosocial in concept and multi-component in method"

Drossman DA: Am J Gastroenterol 2009.

Management of IBS (80% Successful)

- Nonirritating diet
- Appropriate fiber intake (age + 5 grams)
- Antispasmodic (dicyclomine, hyoscyamine)
- Additional treatment: Low dose SSRI/TCA
  Serotonergic agents

Management of CFAP

- Nonirritating diet
- Appropriate fiber
- Antidepressant (may take several weeks for maximal benefit)

Management of Functional Dyspepsia

- Nonirritating diet
- Antisecretory medication (PPI)

- Additional consideration: Promotility medication (usually after investigation – EGD; gastric emptying study)

In summary, Apley was correct, i.e., "Big belly-achers **do** beget little belly-achers".